

WE CLAIM:

1. A method for detecting oxygen consumption in a test sample comprising:
 - (a) exposing a test sample to a sensor composition and a control sample to a sensor composition, said sensor composition comprising a luminescent compound being inhibited from generating a detectable signal in the presence of an inhibitory amount of oxygen and which generates a detectable signal as the inhibitory amount of oxygen is reduced;
 - (b) determining the strength of said signals generated by said sensor compositions exposed to test and control samples at time intervals;
 - (c) comparing the strengths of said signals generated from the sensor composition exposed to the test sample with the signals generated by the sensor composition exposed to said control sample over said time intervals and determining whether oxygen in the test sample has been consumed.
2. The method according to claim 1, wherein said comparing comprises calculating an area between a sample and a control curve and comparing said area to zero.
3. The method according to claim 1, wherein said signals are normalized.
4. The method of claim 1, wherein said luminescent compound is contained within a matrix which is relatively impermeable to water and non-gaseous solutes, but which is permeable to oxygen.

5. The method of claim 4, wherein said matrix is a rubber or plastic matrix.
6. The method of claim 4, wherein said matrix is a silicone rubber matrix.
7. The method of claim 1, wherein said luminescent compound is a tris-4, 7-diphenyl-1, 10-phenanthroline ruthenium (II) salt.
8. The method of claim 7, wherein said luminescent compound is tris-4,7-diphenyl-1, 10-phenanthroline ruthenium (II) chloride.
9. The method of claim 1, wherein said luminescent compound is a tris-2, 2'-bipyridyl ruthenium (II) salt.
10. The method of claim 9, wherein said luminescent compound is tris-2, 2'-bipyridyl ruthenium (II) chloride hexahydrate.
11. The method of claim 1, wherein said luminescent compound is 9, 10-diphenyl anthracene.
12. A method according to claim 1, wherein said test sample and said control sample are substantially isolated from atmospheric oxygen.

13. A method according to claim 1, wherein said test sample comprises a reaction mixture of at least one enzyme which catalyzes oxidative reactions, admixed with a quantity of at least one drug, toxin or chemical.

14. The method of claim 13, wherein said at least one enzyme comprises enzymes in liver cells.

15. The method of claim 13, wherein the at least one enzyme comprises a cytochrome P450 enzyme.

16. An article of manufacture comprising:

computer useable medium and computer readable code embodied on said computer useable medium for detecting oxygen consumption in a test sample wherein the computer readable code:

- (a) is configured to receive of a plurality of signals generated at time intervals by a sensor composition exposed to a test sample and a sensor composition exposed to a control sample, wherein said sensor composition comprises an oxygen sensitive luminescent compound, said luminescent compound being inhibited from generating a detectable signal in the presence of an inhibitory amount of oxygen and which generates a detectable signal as the inhibitory amount of oxygen is reduced, said signals being provided by a user;
- (b) computer readable program code devices configured to cause the computer to effect the comparing of the strengths of said signals generated from the sensor

composition exposed to the test sample with the signals generated by the sensor composition exposed to said control sample over said time intervals and determining whether oxygen in the test sample has been consumed.

17. The article of manufacture according to claim 16, wherein said comparing comprises calculating an area between a sample and a control curve and comparing said area to zero.

18. The article of manufacture according to claim 16, wherein said signals are normalized.

19. A method in a computer system for detecting oxygen consumption in a test sample comprising:

(a) presenting a prompt to a user requesting a submission of signals generated at time intervals by a sensor composition exposed to a test sample and a sensor composition exposed to a control sample, said sensor composition comprising an oxygen sensitive luminescent compound, said luminescent compound being inhibited from generating a detectable signal in the presence of an inhibitory amount of oxygen and which generates a detectable signal as the inhibitory amount of oxygen is reduced;

(b) determining strengths of said signals generated by said sensor compositions exposed to test and control samples at time intervals;

(c) comparing the strengths of said signals generated from the sensor composition exposed to the test sample with the signals generated by the sensor composition exposed

to said control sample over said time intervals and determining whether oxygen in the test sample has been consumed; and

(d) indicating to the user if said signals indicate the consumption of oxygen in the test sample.

20. The method according to claim 19, wherein said comparing comprises calculating an area between a sample and a control curve and comparing said area to zero.

21. The method according to claim 19, wherein said signals are normalized.